the composition of the acid formed in the second, furnish almost conclusive evidence of the generation of tercyanide of allyle by the action of terbromide of allyle on cyanide of potassium.

The relation that exists between di- and tri-atomic acids is well seen when we formulate these bodies according to the carbonic acid type:—

$$2\,HO, C_4H_4'' \left\{ \begin{matrix} C_2O_2 \\ C_2O_2 \end{matrix} \right\} O_2 \qquad\qquad 3\,HO, C_6H_5''' \left\{ \begin{matrix} C_2O_2 \\ C_2O_2 \\ C_2O_2 \end{matrix} \right\} O_3$$

Succinic acid (bibasic). New acid (tribasic).

I propose to continue my researches on the cyanides of the di- and tri-atomic radicals.

II. "Notice of Remarkable Hailstones which fell at Headingley, near Leeds, on the 7th of May, 1862." By THOMAS SUTCLIFFE, Esq., in a letter to Dr. SHARPEY, Sec. R.S.

Headingley, July 16th, 1862.

DEAR SIR,—Allow me to offer you some memoranda, which I made at Headingley, near Leeds, on the 7th of May last, respecting a hailstorm which visited several parts of England on that day. It appears that it arrived at Newark about 5 o'clock P.M., and was succeeded by a tornado which did much damage; then, pursuing a N.N.Westerly direction it reached Wakefield at 6.41. The hail continued to fall till about 6.58. The afternoon at Headingley had been remarkably hot and close, and the atmosphere densely charged with vapour; at 6.45 the sky had become so overspread with dark clouds that it was impossible to see anything within doors without artificial light. There were several peals of thunder and repeated flashes of rose-coloured lightning. The storm visited the villages on the west of Leeds with especial violence, the hailstones knocking down several people, and breaking nearly all glass exposed to the W.S.W.

The hailstones did not fall in a continuous shower, but in irregular clusters; sometimes a field would be thickly strewed with them, whilst an adjoining one escaped with scarcely any; one part of a greenhouse would be much broken, and the remainder, similarly exposed, escape uninjured. The district over which hail fell was very narrow.

To illustrate the force of the falling stones, I may mention that

circular holes were cut in glass without the sheet being otherwise injured. I have the end of a pendulous branch of beech, 12 inches long and $\frac{3}{8}$ths of an inch in circumference, which was cut from the tree, also several larger branches from apple and lilac trees, which appeared to have been split from the adjoining boughs. Some muslin curtains spread on the grass to dry were torn by the hail with numerous crucial rents.

The hailstones were of different forms and sizes. I sketched about forty varieties; but as many bear a certain resemblance to each other, I select four of them for illustration. These were taken out of deep grass nearly half an hour after they had fallen. Figures 1 to 4 represent them of the size and shape they had when I picked them up. The heaviest I weighed was only 2 ozs., but other persons assert that they weighed some upwards of 5 ozs. each. No. 1 had a creamy white colour, with linear markings from the centre outwards; this variety appeared to constitute the nucleus of most of the larger ones, around which transparent ice had accumulated in rounded continuous masses. From the outside of some of the masses protruded icicles; the remains of two may be seen attached to the side of No. 2. When the stones first fell, some of these icicles were $1\frac{1}{2}$ and 2 inches long, and grotesquely shaped. It has been asserted that all the hailstones had the white nucleus, but this was not the case in our neighbourhood; 35 per cent. of those I gathered were without it, and assumed something of the shape of No. 3, which seemed an aggregate of crystals of clear ice. I found one which was composed of five large masses of ice, quite clear, and in size like five nutmegs. There were some which did not correspond with any of the above descriptions; thus No. 4 has the round white radiated mass on the outside of the clear ice.

I annex meteorological reports for the day of the storm.

No. 1. From the 'Times' of May 8th.

May 7th, 1862, 8 o'clock A.M. Towns selected.

	B.	E.	M.	W.	F.	C.	I.	R.	S.
Aberdeen ...	29·93	50°	48°	N.N.E.	2	8	3 r.	0·15	1
Berwick ...	29·93	55	53	Calm.	0	24 f.	8 r.	0·43	2
Scarborough	29·89	57	55	N.E.	1	4	f.	—	2
Liverpool ...	29 89	55	54	E.	1	9	8 r.	0·43	1
Dover	29·83	62	60	S.E.	1	1	b.	—	1
Portland ...	29·85	55	54	E.S.E.	1	9	8 r.	0·35	2

Fig. 2.

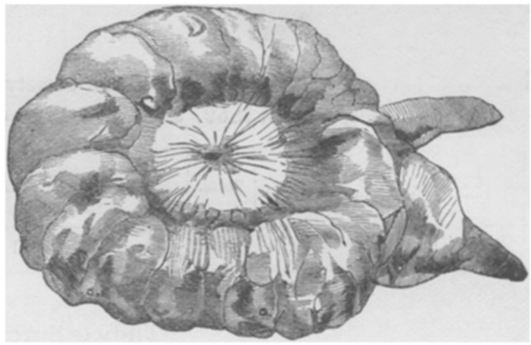

Fig. 3.

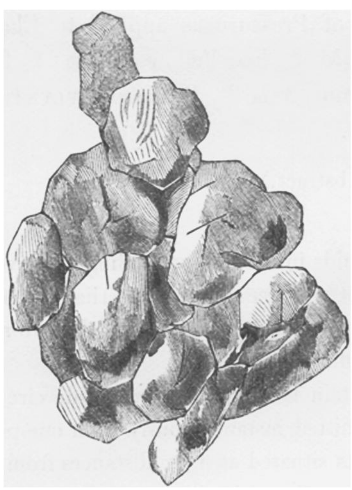

Fig. 1.

Fig. 4.

No. 2. Report kept by Leeds Philosophical Society.
Leeds, May 7, 1862, 5 P.M.

Barometer.	At. Therm.	Dry Bulb.	Wet Bulb.	Wind.	Force.	Cloud.	Shade.		Max. Sun.
							Max.	Min.	
29·380 in.	70°	64°	60°	N.E.	1	10	70	51	100

I am, &c.,
THOMAS SUTCLIFFE.

III. "On the true Theory of Pressure as applied to Elastic Fluids." By R. MOON, M.A., late Fellow of Queen's College, Cambridge. Communicated by Professor SYLVESTER. Received June 26, 1862.

(Abstract.)

It is the author's object—

I. To show that, in elastic fluids in motion, or tending to move, it is not generally true, or at least not accurately true, that the pressure depends solely on the density, as is assumed in the ordinary theory of the motion of elastic fluids.

II. To show that, within certain limits and under certain circumstances, pressure may be transmitted instantaneously from one point of an elastic fluid to other points situated at finite distances from the first, before any change has been effected in the density of the intermediate fluid—in a manner analogous to that in which, in the theory of dynamics as applied to rigid bodies, force is assumed to be propagated instantaneously from one point to another.

III. To show that in elastic fluids in motion, or tending to move, the pressure at any point in a given direction will consist of two parts:—one depending solely on the density, which will be equal in all directions; the other depending on the state of motion throughout the fluid generally, and which will vary with the direction in which the pressure is estimated. The former of these two constituents the author proposes to designate the statical pressure; the latter, the instantaneous pressure. The true pressure at any point in a given direction will be found by taking the sum or difference of the statical and instantaneous pressures, according to circumstances.